Course Title : Psychometrics and Psychological Test Construction

Course Code : PSY-917

Credit Hours : 3

Pre-requisite: Basic Course of Quantitative Data Handling

Course Description:

1. This course aims at helping doctoral students in field of psychology to gain deeper understanding about measuring human behavior and individual differences by comprehending the underpinnings of psychological measurement and its applications. Students will learn about steps involved in development of standard psychological tools, such as item development, item analysis, creating a meaningful score, establishing reliability/validity and test norms etc. Focus will be on developing skills to address issues which are more commonly encountered by students in local context such as translation, adaptation and validation of available standardized measures in local languages. Current issues in testing such as computerized testing and diversity issues, ethical and legal aspects related to psychological testing will be touched.

Course Objectives:

2. The course is designed to:
    a. Provide baseline knowledge to students about psychometric theories and assumptions underlying scale construction
    b. Enhance student's skills in critically assessing the psychometric quality of any psychological instrument
    c. Develop skills for item development, item analysis, determining psychometric properties and norms development for a psychological instrument
    d. Develop skills for item translation, adaptation, gathering reliability & validity evidence and creating local norms for an existing instrument
    e. Understand as well as able to raise their own questions about current issues in psychological testing

Learning Outcomes:

3. The students will be able to

a. Demonstrate their knowledge about psychometric theories and assumptions underlying scale construction
b. Able to evaluate and critique a psychological measure for its reliability, validity and biases
c. Apply this understanding when using a range of common psychological assessment tools in practice or research
d. Able to work effectively on projects aiming at development or adaptation of psychological tools
e. Become more critical about issues such diversity, use of technology in testing as well ethical and legal issues in test construction and adaptation

4. **Course Contents:**

a. Overview on concepts related to assessment, testing and measurement
b. Various types of psychological tests and their purpose
c. Current issues in psychometrics (Diversity, computerized testing)
d. Ethical and legal issues in testing and assessment
e. Review of concepts related to psychometrics
f. Steps of Test Development (Scale Construction, item analysis, reliability, validity evidence, establishing norms for psychological tests).
g. Translation and adaptation of existing psychological tests
h. Latent Variable Models (Constructs, components and factors)
i. Factor Analysis
j. Classical Test Theory
k. Item Response Theory
l. Structural Equation Modeling
m. Goodness of fit and problems with SEM

Recommended Text:

1. DeVellis, R.F. (2011). Scale development: Theory and applications, 3rd edition. [Applied Social Research Methods Series, volume 26]. ISBN-13: 978-1412980449, Thousand Oaks, CA: Sage.
2. Reynolds, C. R., & Livingston, R. B. (2012). *Mastering Modern Psychological testing: Theory & methods*. Boston, MA: Pearson. ISBN-10: 0205886086